

Amendments to the Claims:

This listing of the claims replaces all prior versions and listing of the claims in the present application.

Listing of Claims:

1. (original) A method for fabricating a structured high resolution scintillating device based on light guiding of secondary produced scintillating photons for use in an X-ray pixel detector device with an image detector chip (1), characterized by the steps of

fabrication of a silicon pore matrix (8) presenting a pore spacing (10) corresponding to the image detector pixel size (2), by utilizing silicon etching techniques such as deep reactive ion etching, electrochemical techniques or other techniques providing high-aspect ratios such that thin pore walls of thickness reaching down to a few micrometers will be maintained for an active detection area optimization;

using the silicon pore matrix (8) as a mold when melting a scintillator material into the pores to form in each pore a single scintillating block in order to eliminate grain-boundary scattering of scintillating photons.

2. (currently amended) ~~The method according to claim 1, characterized by the further step of providing, after etching but before molding, A method of fabricating a high resolution~~

scintillating device for an X-ray pixel detector, comprising the steps of:

fabricating a silicon pore matrix having plural pores corresponding to locations of pixels in the X-ray pixel detector, the plural pores being formed by etching a silicon substrate;

melting a scintillating material into the plural pores of the silicon pore matrix to form in each of the plural pores a single scintillating block; and

providing, after the fabricating step but before the melting step, a reflection layer for light guiding by oxidation of the silicon pore matrix [(8)] or by deposition of any layer having a resulting refractive index being lower than that of the used scintillator scintillating material.

3. (original) The method according to claim 1, characterized by the further step of, after etching but before molding, depositing a metallic reflective layer in the pores.

4. (canceled)

5. (original) A scintillating device for simultaneously maintaining resolution and increased sensitivity for X-ray radiation in an imaging arrangement, characterized by utilization of a fabrication method producing a silicon pore matrix (8) presenting a pore spacing (10) corresponding to an image detector pixel size (2), the pore matrix having deep pores (10) presenting thin walls of a thickness reaching down to a few micrometers to

create a pore spacing corresponding to the pixel size (2) of an image detector chip (1), the pore matrix (8) further containing scintillating material which is melted into the pores (10) to form in each pore a single scintillating block in order to eliminate grain-boundary scattering of scintillating photons.

6. (original) The device according to claim 5, characterized by a reflective layer (12) onto the thin walls of the matrix to increase light guiding down to the image detector chip (1).

7-8. (canceled)

9. (new) The device according to claim 5, further comprising a reflection layer on walls of the pores, the reflection layer being one of an oxidation of the silicon pore matrix and a layer having a refractive index lower than a refractive index of the scintillating material.

10. (new) A method of fabricating a high resolution scintillating device for an X-ray pixel detector, comprising the steps of:

forming plural pores in a silicon substrate to form a silicon pore matrix; and

melting a scintillating material into the plural pores of the silicon pore matrix to form a scintillating block in each of the plural pores.

11. (new) The method of claim 10, further comprising the step of providing a reflection layer on walls of the pores by oxidizing the silicon pore matrix in the pores.

12. (new) The method of claim 10, further comprising the step of providing a reflection layer on walls of the pores, the reflection layer having a refractive index lower than that of the scintillating material.

13. (new) The method of claim 10, wherein the plural pores correspond to locations of pixels in the X-ray pixel detector.

14. (new) The method of claim 10, wherein the plural pores are spaced more closely than pixels in the X-ray pixel detector.